Chapter 12

Internal Migration and Employment in Bangladesh: An Economic Evaluation of Rickshaw Pulling in Dhaka City

Abu Hena Reza Hasan

Keywords Internal migration · Urbanization · Poverty · Livelihood opportunity · Rickshaw pulling

1 Introduction

Internal migration of people from one locality to another for livelihood is a regular event in Bangladesh, though adequate secondary data on internal migration in this country is scarce and often not comprehensive. A study by Afsar (2003) on internal migration in Bangladesh analyzed datasets generated by the United Nations, the International Labour Organization (ILO), and the Bangladesh Bureau of Statistics and observed that rural–urban and urban–urban migration were around 90% of the total internal migration in the country. The Bangladesh Population and Housing Census 2011 (BBS 2012) reported that 9.71% of the population of Bangladesh internally migrated in their lifetime and 53.1% of the total internal migration was urban–urban or rural–urban. Available literature has identified income differentials among localities, higher value of work in urban areas, lack of year-round employment in rural areas, and natural disasters as primary determinants of internal migration in the country. Dhaka is the primary destination of urban–urban and rural–urban migration because of the availability of employment in the city. Islam (2013) states that economic forces are the strongest determinants in driving migration to the core urban centers of Dhaka and Chittagong. One of the most popular employment choices for internal migrants in Dhaka is to work as rickshaw pullers.

Dhaka, a megacity of more than 15 million people, has one of the worst public transport systems among the largest cities of the world. According to the Dhaka Metropolitan Police, more than one million cycle rickshaws are plying in the city. Rickshaws are the primary mode of transport of this megacity, where human muscles provide the fuel for the public transport system. Rickshaw pulling, the extremely

A. H. R. Hasan (✉)

Department of International Business, University of Dhaka, Dhaka, Bangladesh
e-mail: abuhasan@du.ac.bd

labor-intensive transport mode, creates employment opportunities for millions of poor internal migrants. Employment opportunities to work as rickshaw pullers in Dhaka city pull people to migrate to this city. The migration of people for higher income contributes to faster urbanization and increasing urban poverty.

The objective of this chapter is to analyze the income, urbanization, and poverty issues related to internal migration induced by opportunities for rickshaw pulling. The population considered by this chapter comprises internal migrants who came to Dhaka and finally selected the livelihood of rickshaw pulling. The chapter uses data collected through an investigator-administered field survey. This study evaluated the characteristics of economic decisions involved in selecting rickshaw pulling as a profession in Dhaka. It estimated the economic value of rickshaw pulling and compared it with two other options of earning for internal migrants—working in their origin localities without migration and working in professions other than rickshaw pulling in Dhaka. The study performed a cost–benefit analysis of three livelihood and living strategies of rickshaw pullers: first, rickshaw pullers living in Dhaka alone, with family members living in their origin localities; second, rickshaw pullers living in Dhaka with family; and, third, nonmigrant rickshaw pullers living in their own localities with family. The last option is the base strategy of the comparative cost–benefit analysis. The cost–benefit analysis helps to evaluate the probable impact of internal migration on the urbanization process.

2 Background of Internal Migration in Bangladesh

People are primarily dependent on agriculture for livelihood in rural areas of Bangladesh, which has the eighth largest population but the 94th largest land area in the world. The high density of population per kilometer does not allow people to earn a sufficient livelihood from agricultural land. Failure to earn enough for satisfactory living motivates people to undertake intracountry migration as a livelihood strategy (Nabi 1992). Dhaka is the most common destination for people who migrate internally because of work opportunities in the readymade garments industry, transport sector, especially as rickshaw pullers, and the households of people who have higher levels of income. Expectations of higher gains from migration encourage people to go to Dhaka in search of livelihoods. Internal migration into the capital city Dhaka had a 6.3% annual rate of increase (Deshingkar 2005). An empirical study by Haider (2010) on poor migrants in Rajshahi city based on primary data observed that loss of income due to natural disasters (49%), unemployment (9%), and poverty (15%) are the main reasons for internal migration. This finding should be applicable to migrants in Dhaka. Using a primary survey on migrants to Dhaka, Al Amin (2010) found that economic reasons play a key role in the migration-related decisions of poor people. He reports that 69% of the respondents migrated due to occupational reasons, and among them, over 53% moved for employment, 31.4% for better income compared to their previous employment, and 10.5% due to

switching jobs. The evidence suggests that people from other areas of Bangladesh migrate to Dhaka primarily for economic gain and employment opportunities.

Migration, more specifically internal migration, is a livelihood strategy to avoid poverty and to raise income with immediate effect. However, the literature presents evidence on the limitation of internal migration as an economic strategy for livelihood. Temporary migration as a routine livelihood strategy for the poor in southeast Bangladesh has a limited ability in lifting households out of poverty, and it is more of a coping strategy to avoid economic misfortunes like losing fixed assets for repaying debts (Finan 2004). Poor migrants often push themselves into the risk of becoming vulnerable at the place of destination in the absence of resources and assistance, and hence their scope to reduce poverty is limited (Afsar 2005). Internal migration without an asset-building strategy may not reduce poverty other than raising the level of consumption in the migrated families (Rogaly and Rafique 2003). The Coalition for the Urban Poor (CUP) in Bangladesh estimated that migrants in Dhaka send up to 60% of their income back to relatives, which constitutes up to 80% of the household budget. Deshingkar (2006) states that remittances are used to finance a range of expenses including food, health, weddings, funerals, and schooling; even if not spent directly for “productive uses,” such spending can have an overall positive impact at the household level by freeing resources for other productive uses. Afsar (2003) observes that income and subsequent remittances from internal migration provided for about 80% of the consumption of families, helped in savings and investment, facilitated the education of children, and transformed landless families to landowners in the rural areas of Bangladesh. These evidences point to the economic benefits of internal migration in Bangladesh, though they may not directly contribute to resource accumulation.

Though Dhaka is the economic hub of the country, it lacks a planned mechanized public transport system. Non-motorized transport (NMT) provides for around 58% of the total trips in Dhaka city. As a transport mode, rickshaws deliver 38% of approximately 20.8 million trips generated everyday by the residents of the Dhaka Metropolitan Area (DHUTS 2010). The share of rickshaws is 7.9 million trips. A newspaper report estimates the average value of one rickshaw trip as Bangladeshi Taka (BDT) 30 (Mansoor 2007). Accordingly, the total income of the rickshaw sector should be around BDT 237.12 million per day or USD 1120.8 million per year. About half million rickshaws provide employment up to 1.5 million people daily. The Japan International Cooperation Agency (JICA) reports that the average income of a rickshaw puller is higher than that of a police constable or a second-tier government officer and eight times the basic minimum salary of a garment worker (Sultana 2009). The average income of a rickshaw puller ranges between BDT 10,000 and BDT 11000. The opportunity of employment as rickshaw puller and higher income thereby is a pull factor for internal migration in Bangladesh. A study reports that about 45% of migrant rickshaw pullers migrated only for better income and 31% followed earlier migrants to have better employment (Morshed and Asami 2011). The Bangladesh Labor Force Survey 2010 reports a positive impact of rickshaw pulling as employment for internal migrant workers on alleviation of chronic poverty (BBS 2011).

3 Methodology of Study

The purpose of this study is to explore the economic reasons behind the selection of rickshaw pulling as a livelihood strategy by internal migrants and its impact on urbanization and poverty reduction in Dhaka through the application of economic and financial analytical tools. The sample of this study is the set of people who migrated from outside of Dhaka into the city and selected rickshaw pulling as a profession. It excludes people who were born in Dhaka and have been working as rickshaw pullers. Due to the absence of adequate secondary data on internal migration, this study has generated data from field investigation. The three objectives of this chapter are:

1. To understand the process of selecting rickshaw pulling as a profession in Dhaka city as a livelihood strategy by people who have migrated internally
2. To explore the economic rationality of selecting the profession of rickshaw pulling by estimating the economic value of this employment and comparing its economic value with the economic value of employment in other professions in Dhaka and the economic value of professions the migrants had in their own localities
3. To assess the impact of rickshaw-pulling-induced internal migration on the process of urbanization in the city of Dhaka by estimating the cost–benefit ratios of three migration strategies—individual migration to work in Dhaka as rickshaw pullers leaving family members behind at the original localities, migration to Dhaka with family members, and no migration

The process and background of internal migration for rickshaw pulling in Dhaka city have been analyzed by examining the sociodemographic background of rickshaw pullers. The study investigates the reasons behind migration and the expectations about employment options in Dhaka city. The association between the length of migration and the length of employment has been analyzed to understand the process of becoming a rickshaw puller. The acquisition of wealth by rickshaw pullers is analyzed to understand the impact of migration on resource creation.

3.1 *Economic Value of Professions*

The study has used a probabilistic quantitative framework to estimate the economic values of professions as stated in the second objective. First, time series data of the three employment options are generated from the data collected through an investigator-administered survey. Only per day income of each option of employment is used in this study. Appendix 1 presents the daily income of all three options of employments. The income function used in this study is

$$Y_p = f(t) \quad (12.1)$$

where Y is income, p is a profession, and t is time.

The probability density function of a profession is

$$P(Y_p) = \frac{f(t)}{\int_a^b f(t) dt} \quad (12.2)$$

where P indicates the probability density function, a is the lower limit, b is the upper limit of definite integration, and t is time.

The expected value of a profession is

$$E(Y_p) = \int_a^b tP(Y_p) dt \quad (12.3)$$

where E indicates the expected value and the definition of other variables remains the same as earlier.

This chapter assumes $E(Y_p)$ as annuity because it is the daily income expected for life-long employment. The first assumption is that a rickshaw puller works 300 days a year and his working life is 25 years. Although these people live from hand to mouth, 300 working days per year is a reasonable estimate because allowances are required for some rest days, sickness, and family engagements. The second assumption is that rickshaw pulling is a regular profession. Hence, the economic value of an employment option is

$$V_p = \left[300 \times E(Y_p) \right] \left[\frac{(1+k)^n - 1}{k} \right] \{n = 25, k = 0.06\} \quad (12.4)$$

where V is the value, p is profession, k is the discount rate, and n is length of the discount period in years. This chapter uses a 6% rate of discount because it is the common rate for the economic evaluation of social projects.

3.2 Benefit–Cost Analysis (BCA) of Migration Options

This chapter uses a benefit–cost analysis for the third objective of the research. The BCA is a systematic process of calculating and comparing benefits and costs of economic options either for evaluating if an option is economically viable or providing a basis for comparing alternative options. The BCA is the ratio of the money value of benefits of an option to the money value of costs of that option. The benefit–cost ratios of alternative options are compared using incremental benefit–cost ratios (IBCR).

The base option is that an individual lives in his/her own locality with family members and earns a livelihood there. The alternative to this is that the individual

migrates to Dhaka for livelihood and becomes a rickshaw puller. This migration may be of two types: individual or with family. The two alternatives of internal migration are compared to the base option of no migration. The benefit of this BCA analysis is the average monetary value earning per day of the specific livelihood option in 2014. The estimated cost is the daily cost of an average family for a specific living arrangement measured in the monetary value of 2014. Hence, the BCR ratio for this chapter is

$$BCR_M = \frac{MVI_M}{MVC_M} \quad (12.5)$$

where BCR is the benefit–cost ratio, MVI is the money value of income, MVC is the money value of cost, and M is migration status.

The following equation is used to estimate the IBCR between the options of migration:

$$IBCR_{21} = \frac{MVI_2 - MVI_1}{MVC_2 - MVC_1} \quad (12.6)$$

4 Data

This research conducted a field survey through questionnaires administered by field investigators. Most of the questions were close-ended. Six locations in Dhaka city were selected through a random process of lottery, and one investigator was assigned to each location for 3 days during the first week of August 2014. The investigators interviewed rickshaw pullers at these locations. The selection of rickshaw pullers followed a judgemental process according to the definition of the sample of survey. Each investigator interviewed between 20 and 25 rickshaw pullers over the period. The field investigators interviewed 148 rickshaw pullers within the stipulated period, but some questionnaires could not fulfill the required standard. A quality control and editing process by the principal investigator canceled 21 questionnaires and used the remaining 127 questionnaires for the study. In absence of secondary data, this paper utilized only primary data for modeling and statistical analysis. The study used various statistical tools for data analysis and model building.

A set of quantitative and statistical techniques was used to explore the three objectives of this study. A simple frequency distribution and multivariate cross-tabulation in addition to means and standard deviations were the primary statistical techniques for the analysis of the first objective. Regression is the technique to estimate income functions. This chapter used linear regression for developing income functions where time is an independent variable. All financial data is in BDT. However, in some cases, the financial figures are presented in USD as well. The time unit of measurement of all income and cost data is a day.

5 Findings of the Study

Rickshaw pulling is a male profession where the worker has to put in hard labor. It is popular among internal migrants who come to Dhaka for employment. Eighty-seven percent of the people interviewed stated that they migrated to Dhaka with a high confidence to earn a livelihood, at least by working as rickshaw pullers. Among the migrants working as rickshaw pullers, 84.1% had been earning in their home location before migration and 81.8% were the sole earning members of the families before coming to Dhaka. An analysis of the employment background before migration shows that 63% of the total respondents were agricultural workers in their own land or in that of others. Other dominating pre-migration professions were daily labor (22.8%), business (13.4%), and rickshaw pulling (13.4%). About 45% of the rickshaw pullers have some education. A majority of the rickshaw pullers, 67.7%, live in Dhaka without family members. The remaining 32.3% rickshaw pullers have migrated with families to Dhaka.

An expectation of higher income influenced migrants to work as rickshaw pullers. About 61% respondents confirmed the possibility of higher income in rickshaw pulling compared to other professions. Even the 20.6% of rickshaw pullers who did not identify rickshaw pulling as a higher-income employment acknowledged that they were earning a higher income in this profession compared to other options of livelihood available to them in consideration of their skills and work experiences. Nearly 60% of the respondents stated the impossibility of earning an equal level of income in their own localities compared to what they earn as rickshaw pullers in Dhaka city. Table 12.1 shows the expected employment of people who migrated to Dhaka for livelihood and the first job they had after arrival in Dhaka city—41.7% came to Dhaka to work as rickshaw pullers, while 48% actually became rickshaw pullers. This indicates the abundance of job opportunities as rickshaw pullers in Dhaka. The second type of employment is in miscellaneous areas, such as hotel boys and domestic workers. Fifteen percent started work as daily laborers or con-

Table 12.1 Comparison of expectation about employment at migration to Dhaka and first job in Dhaka after arrival

Employment options	Expected employment opportunity in Dhaka at migration (percent)	First employment in Dhaka after migration (percent)
Rickshaw puller	41.7	48
Day laborer/ construction worker	5.5	15
Paid regular jobs	1.6	2.9
Business	11.8	3.9
Transport sector work (mechanized)	4.7	0
Miscellaneous employment	34.7	30.2
Total	100	100

Source: Author's calculation

struction workers, though only 5.5% had an initial interest in such work. However, the 52% who had a first job other than rickshaw pulling subsequently switched to the profession of rickshaw pulling.

5.1 Migration and Entry into Rickshaw Pulling

Table 12.2 is the cross-tabulation showing the relation between length of migration to Dhaka and length of employment as rickshaw puller. People who migrated in the last 2 years of the survey started employment as rickshaw pullers immediately (11%); 3.1% or 4 persons who migrated to Dhaka more than 15 years ago had an employment length of less than 2 years as rickshaw pullers. This indicates later entry into this employment, after leaving other professions. Information from the table shows gradual late entries of people into rickshaw pulling from other kinds of employment. Further analysis of this issue revealed that 48% started rickshaw pulling immediately after their migration to Dhaka and another 14.2% did it within 2 years of their migration; 16.5% entered the profession after 10 years or more of their migration. Rickshaw pulling attracts people employed in other professions and they gradually accept it as their profession. It is important to note that 85% of the respondents informed their reluctance in continuing as rickshaw pullers for a long time. The higher income from rickshaw pulling may have attracted them initially to this profession, but they plan to leave this profession after accumulating wealth from it.

5.2 Wealth Creation

Wealth creation is the scaling up of existing tangible or capital assets that may help generate earnings in the future or may improve the quality of life. Sustainability of economic gains from migration depends on the magnitude of tangible and capital wealth accumulated by the migrant. When earnings from migration increase consumption only, they cannot pull out the migrants from poverty. Table 12.3 analyzes the wealth accumulation by the rickshaw pullers. About one-third of the respondents could not create any wealth out of their income as rickshaw pullers, 12.6% bought agricultural land, 11.8% bought rickshaws, and 2.4% invested in business. Information from the table does not show any significant wealth creation by rickshaw pullers.

Table 12.2 Cross-tabulation of length of migration and length of employment as rickshaw puller in Dhaka city

Length of migration to Dhaka (Year)		Length of employment as rickshaw puller (year)							Total
		Less than 2 years	2–5 years	5–7 years	7–10 years	10–15 years	15 years and more		
Less than 2 years	Count	14						14	
	% within migration	100.0%						100.0%	
	% within employment	51.9%						11.0%	
	% of total	11.0%						11.0%	
2–5 years	Count	2	11					13	
	% within migration	15.4%	84.6%					100.0%	
	% within employment	7.4%	52.4%					10.2%	
	% of total	1.6%	8.7%					10.2%	
5–7 years	Count			5				5	
	% within migration			100.0%				100.0%	
	% within employment			83.3%				3.9%	
	% of total			3.9%				3.9%	
7–10 years	Count	4	6		9			19	
	% within migration	21.1%	31.6%		47.4%			100.0%	
	% within employment	14.8%	28.6%		37.5%			15.0%	
	% of total	3.1%	4.7%		7.1%			15.0%	
10–15 years	Count	3	1		8	14		26	
	% within migration	11.5%	3.8%		30.8%	53.8%		100.0%	
	% within employment	11.1%	4.8%		33.3%	73.7%		20.5%	
	% of total	2.4%	0.8%		6.3%	11.0%		20.5%	
15 years and more	Count	4	3	1	7	5	30	50	
	% within migration	8.0%	6.0%	2.0%	14.0%	10.0%	60.0%	100.0%	
	% within employment	14.8%	14.3%	16.7%	29.2%	26.3%	100.0%	39.4%	
	% of total	3.1%	2.4%	0.8%	5.5%	3.9%	23.6%	39.4%	

(continued)

Table 12.2 (continued)

		Length of employment as rickshaw puller (year)							
		Less than 2 years	2–5 years	5–7 years	7–10 years	10– 15 years	15 years and more	Total	
Total	Count	27	21	6	24	19	30	127	
	% within migration	21.3%	16.5%	4.7%	18.9%	15.0%	23.6%	100.0%	
	% within employment	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of total	21.3%	16.5%	4.7%	18.9%	15.0%	23.6%	100.0%	

Source: Author's calculation

Table 12.3 Creation of wealth by rickshaw pullers with their earnings from employment

Type of wealth	No. of people	Percentage
No wealth or financial gain	43	33.9
Cash savings	29	22.8
Purchase of agricultural land	16	12.6
Purchase/repair/build home	32	25.2
Investment in business	3	2.4
Purchase of rickshaw	15	11.8
Educational expenses of children	28	22.0
Purchase of electronics/electrical durables goods	30	23.6
Purchase of gold	2	1.6

Source: Author’s calculation

Table 12.4 Expected and economic value of three different employment options for rickshaw pullers in Dhaka city

Employment options	Earning per day in BDT			Employment period (years)	Present value of earnings for full employment period, V_p (BDT)	
	Max (b)	Min (a)	Expected $E(Y_p)$		In BDT	In US dollars
Rickshaw puller in Dhaka city	510.63	135.00	357.98	25	5892193.10	76116.69
Other employment in Dhaka city	500.00	84.75	336.17	25	5533128.23	71478.21
Employment in origin locality	325.00	25.00	216.16	25	3557890.40	45961.64

Source: Author’s calculation

5.3 Economic Value Rickshaw Pulling in Dhaka City

As discussed earlier, this paper considered three alternative employment scenarios for the respondents. Table 12.4 shows the economic value of these three employment options. Income equations, probability density functions of income equations, expected earnings of all employments, and the present values of the employment options are estimated according to the procedure explained in the methodology. Appendix 2 includes regressions analysis tables and equations of income and probability density functions. The linear regression models for rickshaw pulling in Dhaka city and employment in origin localities were statistically significant, while the other option was not. However, this chapter uses all the regression equations for income estimation.

The calculated expected value is highest for rickshaw pulling in Dhaka, followed by other employments in Dhaka. The economic value of employment as rickshaw puller is BDT 5.89 million. The economic values of other employments in Dhaka

Table 12.5 Benefit–cost ratio of migration options available to rickshaw pullers of Dhaka city in comparison to living and working in the origin location

Migration status of rickshaw pullers	Income per day (BDT)	Family expenditure per day (BDT	Cost–benefit ratio
No migration	254.72	297.24	0.86
Single migration and family remains in original locality	510.63	428.89	1.19
Migration along with family members	510.63	372.5	1.37

Source: Author’s calculation

and employments in origin localities are BDT 5.54 million and 4.59 million, respectively. Both employment options related to internal migration have a higher economic value than working in the origin locality. People from outside Dhaka probably gain financially from internal migration to this city.

5.4 Benefit–Cost Analysis of the Migration Pattern

This chapter considers two alternative modes of migration and compares these with the no migration situation. The benefit–cost ratio is a ratio of the daily earnings or benefits of a rickshaw puller to daily costs or expenses of the family of a rickshaw puller. Table 12.5 shows the BCA ratio of each type of migration. A favorable BCA ratio is greater than 1. The table shows that the BCA of no migration is 0.86, which means it is not an economically viable option. Thus, working in the original locality and living with family may not help earn a sufficient livelihood. The highest BCA ratio is for migration with family at 1.37. The BCA ratio for migration to Dhaka without family is 1.19. The IBCR between no migration and individual migration is 1.94. The same IBCR ratio between no migration and family migration is 3.40. Rickshaw pullers have higher financial gains when they migrate with their families, but about 68% rickshaw pullers lived alone in Dhaka.

Figure 12.1 shows that economic gains increase at a higher rate when rickshaw pullers migrate to Dhaka with their families compared to individual migration to Dhaka. Migrant rickshaw pullers have lower costs of living when they live with their families in Dhaka. Poor migrant rickshaw pullers gained economically when they lived with their families in Dhaka compared to the other alternatives.

5.5 Analysis

Internal migration to Dhaka from other parts of Bangladesh is a regular phenomenon. The ineffective mechanized mass transport system in the city of Dhaka has widened the scope for rickshaws as a mode of mass transport, and this has turned

Fig. 12.1 Benefit to cost of internal migration to Dhaka from other areas of Bangladesh and working as rickshaw pullers
Source: Author's calculation

out to be a blessing to the uneducated and less skilled internal migrants. The probability of a higher income without any skill and training and by using only the power of body muscle is a key pull factor for internal migration to Dhaka. Bangladesh has a young population—32.3% of the population is below 14 years, 18.8% is between 15 and 24 years, and 38.0% is between 25 and 54 years. The dependency ratio is 52.2% and households traditionally depend on male members to earn a living. There is a significant hidden momentum in the population growth. Hence, the city of Dhaka has been experiencing regular inflows of a large number of young males from other parts of the country with an objective to become rickshaw pullers because there is a comparative advantage in this profession. Only 15.9% of the respondents were unemployed in their original localities before they came to Dhaka to work as rickshaw pullers. A significant movement in the workforce may have been undergoing in areas outside Dhaka because of rickshaw-pulling-induced internal migration. Rural and semi-urban areas are losing skilled agricultural and other traditional workers necessary for the economy of these places. Even in Dhaka, workers from other forms of employment are switching to rickshaw pulling. Many switched to rickshaw pulling from other professions even after 15 years of being in Dhaka. A rickshaw puller may earn as high as BDT 1000 per day, and this level of daily income is very difficult to earn in many other employments.

The higher income from rickshaw pulling could not help rickshaw pullers to accumulate resources for future prosperity or for coming out of poverty. The earning from rickshaw pulling may have been fuelling consumption rather than wealth

creation. A majority of the rickshaw pullers could not acquire productive resources with their hard-earned money. Other than building or repairing houses, the income flow of this sector has a limited use in improvements of infrastructure and the economy of the original localities of the migrants.

The economic analysis of rickshaw pulling explored the financial gains from working in this profession compared to alternative professions. The economic value of employment as rickshaw pullers is 1.66 times higher than employment in the origin localities of the migrant workers and 1.07 times higher than working in other employments in the city of Dhaka. Rickshaw pulling has thus become the preferred employment for higher income and may continue as a cause of internal migration till its economic value declines. Further, the benefit–cost ratio uncovered the fact that family migration has more economic benefits than single migration as a livelihood strategy. This reality may accelerate the migration of family members of rickshaw pullers in Dhaka from both rural and urban areas. The highly populated and congested Dhaka may become uninhabitable if 67.7% single migrant rickshaw pullers bring their family members to Dhaka because of the inadequate civic infrastructure of the city.

Studies on the socioeconomic aspects of rickshaw pulling have failed to find welfare gains from rickshaw-pulling-induced internal migration to migrants and their family members. A study by Begum and Sen (2005) observes that rickshaw pulling provided easy access for poor people without education and skill in the urban labor markets and helped them to overcome chronic rural poverty initially. In the long run, rickshaw pulling is an unsustainable profession and initial welfare gains decline with the length of employment. Intergenerational mobility of rickshaw pullers' households is limited due to poor schooling and few occupational choices. Rickshaw pullers suffer from ill health and are susceptible to systematic health risks. Such findings indicate that rickshaw pulling does not ensure a permanent route to escaping poverty. Another study by Al Baki (2013) tried to evaluate whether rickshaw pulling in Dhaka had changed the economic condition of the migrants. He concluded that the long-run expected income from rickshaw pulling was insufficient to improve the economic conditions of most rickshaw pullers and their family members. The living standard of rickshaw pullers and their family members in Dhaka city is not adequate or comfortable. Rickshaw pullers cannot earn an adequate livelihood for themselves and their families in the long run. Family members of rickshaw pullers have to work to earn, and many of the child workers all over the city are the sons and daughters of rickshaw pullers (Roy 2013). Rickshaw pullers and their families live in the slums of Dhaka where living and health conditions are far below the requisite standards. The Bangladesh Urban Health Survey (BUHS) 2013 reports acute malnutrition, underweight, prevalence of stunting among young children, suffering from water - and vector-borne diseases, and road accidents as the major health problems of people living in the slums of Dhaka. The survey findings report that 50% of the slum children below 5 years are stunted and 43% of the urban children are underweight. As slum dwellers, rickshaw pullers and their family members suffer from the health problems reported by BUHS 2013. Rickshaw pulling is an easy way of earning more money, but it fails to provide

social status and an economically sustainable livelihood in the long run (Sadekin et al. 2014). The apparently higher income from rickshaw pulling is thus a delusion. Rickshaw-pulling-induced migration is effectively transferring poverty from other areas of Bangladesh to the city of Dhaka.

The availability of rickshaw-related employments in the city of Dhaka is motivating people to migrate from other areas of Bangladesh to the city. The migration of people from rural to urban areas is the main reason for the growing slum population in Dhaka. The population of Dhaka has been increasing at a faster rate, and it is already beyond the sustainable capacity of the city. About 60% of the current population of 17 million of Dhaka live in slums. Basic facilities like housing, healthcare, electricity, and clean water are not available to these slum dwellers. The population growth in the city of Dhaka will deprive people further from the availability of basic facilities. The positive and causal association between more population and more demand for transport will create opportunities for more people to work as rickshaw pullers in Dhaka given that the city has an ineffective and unorganized mechanized public transport system. This chapter has calculated the highest economic benefit for rickshaw pullers when they migrate with their family members to Dhaka. This economic incentive may pull more people to Dhaka and accelerate the population growth rate in the city. Moreover, rickshaw pullers have larger families, which may further contribute to rapid population expansion in the city (Roy 2013).

It seems that rickshaws in Dhaka have a negative impact on national productivity and income. Rickshaws as a mode of public transport make the unorganized and inadequate public transportation system of the city more ineffective. About one million rickshaws clog the roads and make the movement of mechanized vehicles difficult. The economic value of traffic jams in Dhaka is about USD 2253 million per year from a loss of 8.15 million work hours and 3.2 million business hours a year (Hossain 2014). As mentioned earlier, the annual revenue of the rickshaw sector is about USD 1120.8 million per year, which is lower than the cost of traffic jams in the city. This suggests an economic loss from using rickshaws as a mode of public transportation in the city.

6 Strategic Issues

Rickshaw-pulling-induced internal migration to Dhaka is a function of poverty, access to the urban job market without any professional skill and training, initial higher income, and an ineffective public transport system. There is disguised unemployment in the agrarian rural economy of Bangladesh because of a very low land-to-human ratio. Poverty due to inadequate livelihood from employment in the agrarian and other sectors in their own localities encourages unskilled people to migrate to other areas for a higher income and to come out of poverty. Those who migrate to Dhaka find rickshaw pulling as an employment that enjoys a higher income compared to other kinds of employment available for their skill level and work experience. Dhaka is the largest city and the main economic hub of Bangladesh,

but it has an ineffective and unorganized mechanized public transport system. This weakness has forced the inhabitants of the megacity to use the alternative mode of transport that rickshaws provide.

The employment of rickshaw pulling cannot reduce the poverty of internal migrants. Many studies have observed that rickshaw pulling is an unsustainable employment to reduce the poverty of migrants. This chapter has estimated the economic value of rickshaw pulling from the earning side, which attracts people to work as rickshaw pullers. It has assumed that people have the ability to work for 25 years as rickshaw pullers. The profession of rickshaw pulling has a higher economic value and more income opportunities for unskilled internal migrants to Dhaka if it is a regular profession for a long time. Other studies show that a person cannot work for a long time as a rickshaw puller because of its negative impact on health caused by intensive physical labor (Begum and Sen 2005; Al Baki 2013; Roy 2013). Rickshaw pullers cannot create adequate resources from their profession that may help them to create resources for future solvency. As a result, poor migrants remain poor in the long run and increase the number of poor people in Dhaka. Rickshaws create road congestion and slow down the speed of mechanized transportation on the city roads. The cost of doing business should increase with reduced transport. It is believed that the rickshaw-dominated urban transport system of Dhaka has a negative impact on the national productivity of Bangladesh.

The opportunity to work as rickshaw pullers has been increasing the population of Dhaka city because each rickshaw provides employment to at least two persons on an average. About one million rickshaws are keeping around two million people in Dhaka city, excluding their family members. The family members of migrant rickshaw pullers come to Dhaka, following the earning member of the household. These people are poor and live in an unhealthy environment in urban slums. In most the cases, the living conditions of these people are inferior to their living conditions in their own localities. Dhaka is overcrowded and often ranked as one of the least livable cities in the world. The increasing inflow of people to Dhaka to work as rickshaw pullers and in other unskilled works is making the living conditions worse.

In spite of a higher perceived economic value of rickshaw pulling, this profession has the inability to effectively reduce poverty among the migrants. It has been contributing to unplanned growth in the urban population and has a negative impact on national productivity through the creation of traffic congestion and reduction of speed of mechanized vehicles on roads. Figure 12.2 shows the relationship between internal migration, urbanization, and poverty in the city of Dhaka because of the opportunity to work as rickshaw pullers.

7 Policy Recommendations

Rickshaw pulling is an economically unsustainable profession and is inefficient in reducing poverty. Internal migration based on the expectation of earning a higher income by rickshaw pulling is often a false reality and ends up transferring poverty

Fig. 12.2 The relationship between internal migration, urbanization, and poverty in Dhaka among the rickshaw pullers

Source: Author's illustration

from rural to urban areas. A set of policies may help control internal migration to Dhaka induced by the profession of rickshaw pulling. First, compulsory licenses for rickshaws and driving licenses for rickshaw pullers within the city of Dhaka may reduce the number of rickshaws on the roads of the city. It will reduce the scope for unskilled new migrants to work as rickshaw pullers and will weaken the motive behind the rickshaw-pulling-induced migration. It may help reduce the population size within Dhaka city as well. Second, investments in manufacturing and other economic sectors in areas outside of Dhaka must be scaled up to create alternative employment for people facing disguised unemployment in their own localities. Third, vocational and other training programs for the skill development of rickshaw pullers may motivate them to leave the profession of rickshaw pulling, which is unable to increase their income as well as the national income in the long run. Finally, an effective and adequate mechanized public transport system is essential for the city of Dhaka to limit the scope of rickshaws to be the alternative mode of transport. Implementation of these policies may help reduce the demand for employment as rickshaw pullers and can effectively slow down the population growth in the city of Dhaka. It should scale down the transfer of rural poverty to urban areas.

There is not much research on the socioeconomic impacts of rickshaw-pulling-induced internal migration. Impacts of this migration on rural agriculture and other sectors need more investigation. The economic and social impact of the settlement process of these migrants and their family members on the urbanization process of

Dhaka and other large cities has not received adequate attention. It is also essential to identify alternative employment opportunities for erstwhile rickshaw pullers who are no longer engaged in the profession due to ill health or other reasons.

8 Conclusion

Unskilled migrants from outside Dhaka come to the city and prefer to work as rickshaw pullers because this profession has the highest economic value of BDT 5.6 million for a 25-year working life compared to other professions. In reality, it is not a regular long-run profession, and 85% of rickshaw pullers stated their desire to not continue with the profession for a long time. The inability to work as rickshaw pullers for a long period cannot deliver the total economic gains that poor migrants expect at the beginning of taking on this profession. Most migrants fail to come out of poverty, and in most cases, they become part of the urban poor. The quality of life of the urban poor is inferior to that of the rural poor because of poor living conditions and adverse health conditions. However, the demand for rickshaws as mode of transport continues to pull new people to the city to replace many who leave the profession. This accelerates population growth inside Dhaka. The increasing number of rickshaws on roads acts as a bottleneck for the free flow of mechanized vehicles. Evaluating all these negative impacts against the initial hope for higher income from employment as rickshaw pullers, this chapter recommends that the employment of rickshaw pulling should be properly managed. Identification of alternative employment opportunities, improvement in public transport, and providing skills training to unskilled migrants may discourage them from entering this profession. This needs further investigation for evidence-based policy formulation.

Appendices

Appendix 1: Time Series of Income from Different Employment Options (Calculated from Survey Data)

Year	Daily income from		
	Rickshaw pulling in Dhaka	Other employment in Dhaka	Earning in original locality
1990	145.00	285.33	108.28
1991	150.00	200.00	60.00
1992	150.00	—	30.00
1993	150.00	—	25.00
1994	135.00	84.75	61.80
1995	150.00	146.00	160.00

Year	Daily income from		
	Rickshaw pulling in Dhaka	Other employment in Dhaka	Earning in original locality
1996	200.00	255.00	70.00
1997	241.47	255.00	230.00
1998	200.00	500.00	136.67
1999	352.86	197.00	198.75
2000	192.86	227.50	167.50
2001	—	—	—
2002	206.25	226.67	141.67
2003	200.00	210.00	80.00
2004	283.75	220.00	158.89
2005	300.00	400.00	175.00
2006	292.22	206.00	146.67
2007	370.00	—	177.50
2008	200.00	—	200.00
2009	250.00	416.67	260.00
2010	337.50	—	200.00
2011	392.86	400.00	325.00
2012	283.33	207.00	178.00
2013	327.78	—	237.00
2014	510.63	—	254.72

Note: ‘—’ = not available

Appendix 2: Income Function and Probability Density Function of Income of Different Employment Options (Estimated from Survey Data)

Regression Parameters of Income Functions

Parameters	Rickshaw pulling in Dhaka	Other employment in Dhaka	Earning in original locality
Constant	117.00	195.12	55.99
Time (t)	10.16	5.64	7.77
R square	0.63	0.11	0.58
F-statistics	38.26	2.01	31.47
Significance (p)	0.00	0.18	0.00

Rickshaw pulling in Dhaka:

- $Y_{\text{Rickshaw}} = 117.00 + 10.162t$
- $P(Y_{\text{Rickshaw}}) = 0.00000078(0.117.00 + 10.162t)$

Other employment in Dhaka:

- $Y_{\text{Other}} = 195.12 + 5.46t$
- $P(Y_{\text{Other}}) = 0.00000134(195.12 + 5.46t)$

Income at original location of the person:

- $Y_{\text{Home}} = 55.99 + 7.77t$
- $P(Y_{\text{Home}}) = 0.00000235(55.99 + 7.77t)$

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